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Early Childhood Caries

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A 5 year-old girl presented for a well-child care (WCC) visit, and her physical examination results were notable for circumferential dental caries of her anterior maxillary dentition (**Figure**). Further questioning revealed that the girl had used a baby bottle use until age 2 and had slept with the bottle every night.

Early childhood caries (ECC) are also known as “baby bottle caries” or “milk bottle caries” because prolonged use of a bottle is the primary risk factor. More specifically, ECC are caused by early oral colonization with the cariogenic microorganism *Streptococcus mutans.* The majority of children with caries are colonized secondary to vertical transmission from parents.[1] It is important to remember that ECC are more than a cosmetic problem. Complications include abscess formation and the need for multiple teeth extractions. Premature loss of teeth in childhood causes future difficulties, such as loss of arch width and crowding of dentition often leading to referrals to experts in periodontics, orthodontics, and/or oral surgery. In addition, the effects of ECC reach beyond oral health to affect overall well being. Among children seeking emergency dental care, 19% experienced interference with play, 32% with school, 50% with sleeping, and 86% with eating. Care for these children also consumes a disproportionate share of dental expenditures, as treatment typically requires general anesthesia.[2]

Prevention is most important when it comes to ECC. Every WCC visit provides an opportunity to counsel parents about their child’s eating habits and oral hygiene. Parents should be advised to discontinue bottle feedings between 12 and 18 months of age, avoid allowing the child to sleep with the bottle, and limit carbohydrate-based snacks between meals. Fruit juice consumption should be limited to 1 serving per day of 100% fruit juice (approximately 4 oz).[3] Good oral care includes cleaning the child’s teeth when the first tooth erupts, using a rice-sized amount of fluoride toothpaste until age 3, and using a pea-sized amount between ages 3 and 6 years.[4]

The American Academy of Pediatric Dentistry recommends that children see a pediatric dentist by 1 year of age or within 6 months of the first tooth eruption, and the American Academy of Pediatrics (AAP) also recommends establishing a dental home by age one.[5] However, in practice, pediatricians report barriers to early dental visits, including their personal preferences

practice, pediatricians report barriers to early dental visits, including their personal preferences regarding recommending dental visits for children under age 3 with low risk of caries, as well as parents' beliefs about whether dental visits at a young age are necessary.[6,7] As a result, most patients have their first dental visit at a mean of 2.8 years.[7]

For children at risk for ECC[8] (**Table**) and without regular dental care, pediatricians can apply fluoride varnish as preventative care to both primary and permanent teeth every 3-6 months during WCC visits.[4] Teeth should be dried with gauze prior to painting the varnish onto all surfaces of the teeth. In order to maximize varnish-tooth contact time, children should eat soft foods that day and not brush their teeth that night. Encouraging good oral hygiene and applying fluoride varnish at WCC visits is important since children have more pediatric than dental visits in their first 3 years of life. If time and resources for treating ECC are limited during the WCC visit, pediatricians can assess risk factors and make a referral to a pediatric dentist for assistance with the specific needs of application of topical agents or dental restorations.

Table. Risk Factors for Early Childhood Caries[8]

Low socioeconomic status
Limited or no dental insurance
Limited or no access to dental care
Early colonization with *S mutans*
High levels of *S mutans* in parents
Caries in a parent or sibling
Poor feeding habits (using a bottle at night/after 12-18 months)
Poor oral hygiene
Inadequate fluoride exposure
Visible plaque(s) on teeth

Our patient was referred to a pediatric dentist, where the affected teeth were extracted under general anesthesia. This case highlights the importance of counseling on baby bottle use at pediatric WCC visits, as well as the importance of sleeping through the night without a baby bottle.

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